

As shown in FIG. 5, the strips 14 and 15 preferably are magnetized to provide magnetic fields emanating from sequentially alternating pole faces along the length of the plastic members.

One of the plastic members, such as the member 14, for example, may be bonded by a suitable bonding layer 16 or may be mechanically fixedly attached to a marginal flange 17 of the receptacle 12.

The other plastic member, such as the member 15, is bonded or mechanically fastened to a plate 18 having studs 19 projecting through slots 21 in a wall surface 22 of the closure 13. Attached to the plate 18 is a centrally positioned shaft 23 carrying a knob 24. The knob 24 is manually reciprocable in a recess 25 in the outer panel 26 of the closure 13. Suitable springs 27 are anchored to an inner wall 28 and to the shaft 23 carrying the knob 24.

In closed position of the closure 13, the two plastic members 14 and 15 are in abutting relation to each other as shown in FIG. 3. In this abutting relation, the pole faces of opposite polarity are in alignment with each other as shown in FIG. 5. That is, each section of the strip 14 having a north pole is in abutting relation to a section of the strip 15 having a south pole, each section of the strip 14 having a south pole is in abutting relation to a section of the strip 15 having a north pole, and so on. There is thus created closed magnetic paths for creating a magnetic force to hold the closure in closed position.

It would be possible to open the closure 13 by pulling on the knob 24 in a direction normal to the surfaces of the magnetic members 14 and 15. It is contemplated, however, that relatively strong magnets will be used to insure that the closure will not be popped open upon any sudden shock encountered by the vehicle body. As a result, anyone having a relatively weak grip or perhaps fingers too large to suitably grasp the knob 24 to pull the latter in a direction normal to the plastic member surfaces will be unable to exert sufficient force to overcome the magnetic attraction between the two plastic members 14 and 15.

Relatively less force is required to slide the two plastic members 14 and 15 relative to each other. Therefore, if the knob 24 is pushed in the direction of the arrow 29 in FIG. 3, a condition is created in which the pole faces on the strip 15 are shifted laterally so that like poles will be in abutting relation on the two plastic members 14 and 15. Since the magnetic fields of like poles oppose each other, the closure 13 will be forced in the direction of the arrow 31 in FIG. 4. Closure 13 thus will be moved from the "latched" position in FIG. 3 to the "unlatched" condition of FIG. 4 so that access to the interior of receptacle 12 may be readily obtained.

Upon release of the knob 24 the springs 27 will center the plastic member 15 in its normal position, as shown in FIG. 3, so that the next time the closure 13 is swung to a closed position pole faces of unlike polarity on the strips 14 and 15 again will be in alignment and the closure will be snapped shut as soon as the magnetic fields of the two plastic strips come into overlapping relationship.

It will be readily understood that the latching arrange-

ment disclosed in the present invention is readily applicable to refrigerator doors, cabinet doors or any other closures which are retained in closed position by magnetic devices.

It is to be understood that this invention is not limited to the exact construction illustrated and described above or in the abstract preceding the specification, but that various changes and modifications may be made without departing from the scope and spirit of the invention.

We claim:

1. A magnetic latch for a receptacle having an opening and a closure for said opening,

said magnetic latch comprising plastic members formed of magnetic material blended into a plastic material,

a first retaining means mounting one of said plastic members on a receptacle surface,

a second retaining means mounting another of said plastic members on a closure surface,

the magnetic material in each of said plastic members being magnetized to provide magnetic fields emanating from sequentially alternating pole faces along the plastic members,

said plastic members in closed position of the closure being positioned with pole faces of opposite polarity abutting each other to provide closed magnetic paths for creating a magnetic force to hold the closure in closed position,

the improvement comprising:

one of said retaining means mounting its associated plastic member for movement relative to the surface on which it is mounted,

the other of said retaining means fixedly holding its associated plastic member on the surface to which it is mounted,

and operating means including an operating member for moving the movable plastic member relative to the fixed plastic member in a plane parallel to the abutting surfaces to position like pole faces in abutting relation to each other so that the respective magnetic fields will be in operation thereby creating a magnetic force urging said closure toward an open position,

said operating means including resilient means restoring said movable plastic member to pre-moved position upon release of the operating member.

References Cited

UNITED STATES PATENTS

2,932,545	4/1960	Foley	292—251.5
2,964,275	12/1960	Atkinson	248—95
3,008,209	11/1961	Kurt	24—203
3,288,511	11/1966	Tavano	292—251.5

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